From:	Russell Graham
To:	Alyssa Macy; Austin Greene; Brigette McConville; Carina Miller; Caroline Cruz; Charles Calica; Danni Katchia; Lee Tom; Prevost, Carol (IHS/POR); Raymond Tsumpti; Travis Wells; Valerie Switzler; Duvil, Ricardi; michele stacona
Subject:	Boil Notice
Date:	Monday, November 5, 2018 3:57:24 PM

It is the opinion of this office that any water that is in distribution for agency must be boiled, period. We are not in any position to state the water is safe until such time we test using bacteriological test for total coliform and ecoli, along with validation from distribution has residual from total and especially free coliform. There are far too many risks and errors and points where we can have inadvertent contamination. We must test for consumer confidence and EPA compliance.

We cannot delay this notice and it cannot be downplayed—this is a public health emergency, send the boil order now in the name of public health.

I will not stand here while we cannot prove the safety of our water. The risk is far too great, and anyone that disagrees with me is crazy! Now is the time to act before we kill someone, period or we have someone claim sickness that we cannot epidemilogically prove otherwise.

And FYI, the EPA is copied. We need to stop this NOW, PERIOD!
--

Russell Graham, R.S./R.E.H.S.
Environmental Health Specialist / Sanitation and Landfill

Confederated Tribes of Warm Springs
Environmental Health Program
P.O. Box C
Warm Springs, OR 97761

(541) 553-4943

russell.graham@wstribes.org

From: Duvil, Ricardi
Sent: Tuesday, November 13, 2018 2:11 PM
To: Thurmon, Clarke
Subject: Boil Water Notice
Attachments: Warm Springs Water System 11.13.2018.docx

I left you a voicemail.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3123

OFFICE OF
WATER AND
WATERSHEDS

November 13, 2018

Travis wells, General Manager
Warm Springs Water Treatment Plant
Confederated Tribes of Warm Springs
P.O. Box 1196
Warm Springs, Oregon 97761

Re: Boil Water Notice Issued on November 5, 2018
Warm Springs Water Treatment Plant PWS ID# 104101247

Dear Mr. Wells:

We recently reviewed your system's bacteriological results for total coliform and E. coli, along with chlorine residual levels sampled on November 8, 2018. We also reviewed your completion report for the repair due to loss of pressure event that occurred on Sunday, November 4, 2018. As you are aware, a boil water notice is in effect until laboratory results show that water is safe from bacterial contamination and all the necessary steps have been taken to protect public health.

Based on information provided by your system on November 11, 2018, our review showed after the main line repair was completed both for total coliform and E. coli sampling results were absent and free chlorine residual levels have returned to baseline levels. As a result, we recommend your boil water notice may be lifted.

If you have any questions, please contact Ricardi Duvil, Ph.D., P.E., Surface Water Rule Manager, at (206) 553-2578 or duvil.ricardi@epa.gov. We appreciate your efforts to protect the health of the customers of your drinking water system.

Sincerely,

Marie Jennings
Drinking Water Unit Manager

From: Travis Wells
To: Duvil, Ricardi
Subject: Boil Water Notice?
Date: Friday, October 12, 2018 11:22:07 AM

Mr. Duvil,

My office has been trying to contact you today with no luck. We have a very important issue that we are trying to resolve and I have been trying to get input from the EPA offices. Could you please respond by calling my office ASAP?

I can be reached at (541) 553-3452.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

From:	Travis Wells
To:	Duvil, Ricardi
Cc:	Alyssa Macy; Chico Holliday; Graham, Russell (IHS/POR); michele stacona
Subject:	Boil Water Notice
Date:	Monday, November 5, 2018 5:55:11 PM
Attachments:	2018.11.05 Boil Water Notice Agency System FINAL.pdf

See the attachment. This is being distributed via KWSO this evening.

--

Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246
C: (541) 460-1262

CONFEDERATED TRIBES OF
WARM SPRINGS
1855

Confederated Tribes of Warm Springs, Oregon
Public Utilities Branch
PO Box 1196
Warm Springs, OR 97761
Phone: 541-553-3246
Fax: 541-553-3380

BOIL WATER NOTICE
Loss of pressure in The Agency Water System

BOIL YOUR WATER BEFORE USING

Bring tap water to a rolling boil, boil for one minute, and cool before using. Or use bottled water certified for sale by the Oregon State Department of Health. Boiled or bottled water should be used for drinking, making ice, washing dishes, brushing teeth, and preparing food until further notice.

This Boil Water Notice applies to all residences and businesses in the Warm Springs agency area.

What Happened ?
On Sunday morning the 4th of November, 2018 the water system lost pressure due to a main line break near the crossing the Shitike River crossing.

When water mains lose pressure it increases the chance that untreated water and harmful microbes can enter your water.

Harmful microbes in drinking water can cause diarrhea, cramps, nausea, headaches, or other symptoms and may pose a special health risk for infants, some elderly, and people with severely compromised immune systems. But these symptoms are <u>not</u> just caused by microbes in drinking water. If you experience any of these symptoms and they persist, you should seek medical advice.

What is being done ?
The Branch of Public Utilities water crew will be making repairs to the 14" main line beginning on the morning of November 6th, 2018. It is anticipated that the repairs should be completed with 24 hours and recharging the system will take another approximately 5-6 hours after repairs.

Based on the recommendation of the tribal sanitarian, you will need to boil water indefinitely or until the problem is fixed. You will be informed when tests show that you no longer need to boil your water.

For more information, please contact:
The Branch of Public Utilities, Water & Wastewater division at (541) 553-3246 or the Office of Environmental Health at (541) 553-4943.

Please share this information with other people who drink this water, especially anyone who may <u>not</u> get this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

PWSID 104101247 Date distributed: November 5, 2018

From: Travis Wells
To: Duvil, Ricardi
Subject: Completion Report
Date: Friday, November 9, 2018 1:18:02 PM
Attachments: Completion Report 11-9-18.pdf

Please review the attached PDF and let me know if this is what you are looking for.

I am waiting for the test results to officially come back but we were told they were all negative.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

CONFEDERATED TRIBES OF
WARM SPRINGS
1855

Confederated Tribes of Warm Springs, Oregon
Public Utilities Branch
PO Box 1196
Warm Springs, OR 97761
Phone: 541-553-3246
Fax: 541-553-3380

TO: Ricardi Duvil, Ph.D., P.E., Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10

FROM: Travis Wells, BPU General Manager

DATE: November 9, 2018

SUBJECT: Completion Report

This completion report is being submitted for a "loss of pressure" event that occurred on Sunday, November 4, 2018 on the Warm Springs Agency Water System (PWSID #104101247).

TimeLine:

Sunday, 11/4/2018 – Water Treatment Plant staff noticed a significant reduction in the water level of the main reservoir (Teewee Butte Reservoir) and investigated further to find that there was a main line break near the Shitike Creek Crossing. Notification went out to the distribution staff who then started to gather equipment and order parts to make the necessary repair. At this time there was still water in all reservoirs so staff decided to wait until the next day to start isolating the break.

Monday, 11/5/18 – Parts were ordered to repair the main line but would not be available until the next day as they had to be shipped from Seattle, WA. Portable toilets and bottled drinking water was also ordered in anticipation of the water system shutdown that occurred later in the day. The system was shutdown at approximately 4:00PM with an official "Boil Water Notice" issued at approximately 4:30PM.

Tuesday, 11/6/18 – Equipment necessary to make the repair was delivered (6" trash pump, excavator, repair gaskets, etc.) Throughout the day with actual excavation starting at around 2:00PM Once the line break was exposed it became apparent that additional repair materials would be needed so the operation was shut down late that evening until the next day.

Wednesday, 11/7/18 – The additional parts were ordered in the morning with delivery at approximately 2:00PM. The damaged main line was cut and the repair bands, transition gaskets and mega-lugs were installed and the open trench backfilled. The mainline was then slowly charged with hydrant flushing until 8:00PM. The community was advised that the system was being pressurized but the boil water notice was still in effect until further notice.

Thursday, 11/8/18 – Flushing of the system continued in the morning with BacT sampling immediately following. 20 samples were taken and delivered to a certified lab by the afternoon.

Friday, 11/9/18 - Sample results were confirmed to be negative on all 20 samples.

All repair work was completed by our own distribution staff and overseen by a certified distribution operator using accepted common practices. Isolation of the system kept all residents in water except those served by the SE Reservoir (see attached map). As a precautionary measure, the boil water notice was issued for the entire system so that there would be no confusion as to which parts of the system were, or were not, affected. Most of the equipment had to be rented from other places and the repair materials came from out of state which resulted in an extended amount of time to get the repair completed.

If you have any further questions or concerns please do not hesitate to contact me directly at (541 55-3452 or (541) 460-1262. I can also be reached by email at travis.wells@wstribes.org.

Respectfully submitted,

Travis R. Wells, BPU General Manager

Cc: Alyssa Macy, Chief Operations Officer
Michele Stacona, Secretary-Treasurer
Tribal Council
File

From: Travis Wells
To: Duvil, Ricardi
Subject: EPA Letter
Date: Tuesday, November 13, 2018 2:45:22 PM

I apologize for asking again but we need the letter from your office so that we can open facilities tomorrow. The COO and S/T are requesting the letter to lift the Boil Water Notice ASAP.

--

Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246
C: (541) 460-1262

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--

Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246
C: (541) 460-1262

From: Duvil, Ricardi
To: Jennings, Marie
Cc: Opalski, Dan
Subject: FW: Completion Report
Date: Tuesday, November 13, 2018 4:40:00 PM
Attachments: Completion Report 11-9-18.pdf

FYI- Repair completion report. See attached

Cheers,
Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Travis Wells <travis.wells@wstribes.org>

Sent: Friday, November 09, 2018 1:16 PM

To: Duvil, Ricardi <duvil.ricardi@epa.gov>

Subject: Completion Report

Please review the attached PDF and let me know if this is what you are looking for. I am waiting for the test results to officially come back but we were told they were all negative.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

CONFEDERATED TRIBES OF
WARM SPRINGS
1855

Confederated Tribes of Warm Springs, Oregon
Public Utilities Branch
PO Box 1196
Warm Springs, OR 97761
Phone: 541-553-3246
Fax: 541-553-3380

TO: Ricardi Duvil, Ph.D., P.E., Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10

FROM: Travis Wells, BPU General Manager

DATE: November 9, 2018

SUBJECT: Completion Report

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TimeLine:

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If you have any further questions or concerns please do not hesitate to contact me directly at (541 55-3452 or (541) 460-1262. I can also be reached by email at travis.wells@wstribes.org.

Respectfully submitted,

Travis R. Wells, BPU General Manager

Cc: Alyssa Macy, Chief Operations Officer
Michele Stacona, Secretary-Treasurer
Tribal Council
File

From: Duvil, Ricardi
To: Jennings, Marie
Cc: Opalski, Dan
Subject: FW: EPA Letter
Date: Wednesday, November 14, 2018 10:45:00 AM
Attachments: Warm Springs Water System_11_13_18.pdf

Hi Marie:

Per our conversation this morning, I emailed the letter yesterday afternoon to Travis Wells and cc : Alyssa Macy. This morning, I spoke to Travis and he confirmed the Tribe is back on track.

FYI- I am currently visiting Yakima Tribe with Chris, Jenna and Molly to discuss some DBP issues.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
Sent: Tuesday, November 13, 2018 5:17 PM
To: 'Travis Wells' <travis.wells@wstribes.org>
Cc: Alyssa Macy <alyssa.macy@wstribes.org>
Subject: RE: EPA Letter

Travis:

Attached is the letter for Warm Spring Water System regarding the Boil Water Notice.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Travis Wells <travis.wells@wstribes.org>
Sent: Tuesday, November 13, 2018 2:45 PM
To: Duvil, Ricardi <duvil.ricardi@epa.gov>
Subject: EPA Letter

I apologize for asking again but we need the letter from your office so that we can open facilities tomorrow. The COO and S/T are requesting the letter to lift the Boil Water Notice ASAP.

--

Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246

C: (541) 460-1262

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3123

OFFICE OF
WATER AND
WATERSHEDS

November 13, 2018

Travis Wells, General Manager
Warm Springs Water Treatment Plant
Confederated Tribes of Warm Springs
P.O. Box 1196
Warm Springs, Oregon 97761

Re: Boil Water Notice Issued on November 5, 2018
Warm Springs Water Treatment Plant PWS ID# 104101247

Dear Mr. Wells:

We recently reviewed the Warm Springs Water Treatment Plant's (WSWTP) bacteriological results for total coliform and E. coli, along with chlorine residual levels sampled on November 8, 2018. We also reviewed the WSWTP's completion report for the repair due to loss of pressure event that occurred on Sunday, November 4, 2018. As you are aware, a boil water notice is currently in effect to protect public health.

Based on information provided by the WSWTP on November 11, 2018, our review showed, after the main line repair was completed, sampling results indicate that both total coliform and E. coli were absent and free chlorine residual levels have returned to baseline levels. As a result, EPA is comfortable with the WSWTP lifting the boil water notice.

If you have any questions, please contact Ricardi Duvil, Ph.D., P.E., Surface Water Rule Manager, at (206) 553-2578 or duvil.ricardi@epa.gov. We appreciate your efforts to protect the health of the customers of your drinking water system.

Sincerely,

Marie Jennings
Drinking Water Unit Manager

Cc: Alyssa Macy, Chief Operations Officer

From:	Duvil, Ricardi
To:	Opalski, Dan; Chung, Angela; Thurmon, Clarke; Contreras, Peter; Wilson, Wenona; Kowalski, Edward; Steiner-Riley, Cara
Cc:	Jennings, Marie
Subject:	FW: Trip Report Warm Springs Dec 4-5, 2018
Date:	Monday, December 10, 2018 2:31:00 PM
Attachments:	TR Warm Springs 12-2018.pdf image001.jpg

FYI

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Travis Wells <travis.wells@wstribes.org>
Sent: Monday, December 10, 2018 2:25 PM
To: Jennings, Marie <Jennings.Marie@epa.gov>; Duvil, Ricardi <duvil.ricardi@epa.gov>
Cc: Alyssa Macy <alyssa.macy@wstribes.org>
Subject: Fwd: Trip Report Warm Springs Dec 4-5, 2018

As promised, see the attached site visit report from Laddie.

I am concerned about the cost of the calibration solution and the frequency EPA has requested from us. Is there any way we can minimize that to monthly instead of weekly as asked for by Mr. Duvil? If we do the weekly calibration we are looking at $1,920 for the three month schedule versus $480 if we do the calibration monthly.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

---------- Forwarded message ---------
From: **Folster, Laddie (IHS/POR)** <Laddie.Folster@ihs.gov>
Date: Mon, Dec 10, 2018 at 1:07 PM
Subject: Trip Report Warm Springs Dec 4-5, 2018
To: Travis Wells <travis.wells@wstribes.org>
Cc: chico.holliday@wstribes.org <chico.holliday@wstribes.org>, steve.courtney@wstribes.org <steve.courtney@wstribes.org>, Sauer, Steve (IHS/POR) <Steve.Sauer@ihs.gov>, Hancey, Derek (IHS/POR) <Derek.Hancey@ihs.gov>, Haugland, Craig J. (IHS/POR) <Craig.Haugland@ihs.gov>, Martinson, Mathew J (IHS/POR) <Mathew.Martinson@ihs.gov>

Travis:

Please find attached my Trip Report for last week at the WTP. Included is what was accomplished and recommendations. Please call If you have questions about this.

Ladd Folster

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Indian Health Service
Spokane District Office
528 E. Spokane Falls Blvd.
Suite 302
Spokane, WA 99202

MEMORANDUM

DATE: Monday, December 10, 2018

FROM: Tribal Utility Consultant (TUC)

SUBJECT: Trip Report, Warm Springs, Dry Creek Surface Water Treatment Plant (WTP) December 4-5, 2018

TO: The Record

BACKGROUND & OBJECTIVES:

To assist the Utility to:

1. Calibrate the six Hach 1720E Turbidimeters
2. Assist the operators to get a handle on coagulant control

CONTACT(S):

Mr. Travis Wells, GM, Public Works Department, Warm Springs Tribe
Mr. Steve Courtney, Lead Operator, Dry Creek Surface Plant, Warm Springs
Mr. Ronnie Palmer, Operator, Dry Creek Surface Plant, Warm Springs
Mr. Steven Stewart, Operator, Dry Creek Surface Plant, Warm Springs

FINDING(S) AND ACCOMPLISHMENT(S):

Calibration of the Hach 1720E Turbidimeters.

After arriving at the WTP, I talked to Steve Courtney about the issues he wanted me to assist them with. First was the calibration of the six Hach 1720E Turbidimeters. There is one raw water, 4 individual filter effluent (IFE) and one combined filter effluent (CFE) turbidimeters in the process. Hach recommends that these be cleaned and calibrated quarterly and bulbs replaced annually. From the calibration log in the sc200 controllers, this has not been done since they were installed in 2016. Calibration standards in the form of StablCal 20NTU and new light bulbs were on hand.

Once we were ready, I went over how to prepare the calibration column and how to pour in the StablCal into the column. Mr. Palmer, Stewart and I started with the CFE and preceded through the IFE to the raw water 1720E. All had good calibration and thoroughly cleaned except IFE #2 (filter #2). This unit would not take a calibration even after multiple tries. The light flashed inside sometimes and the sc200 would display errors. We disassembled the head to see if there were loose wires, there were no apparent issues. We reassemble and placed the 1720E back into place.

This IFE, #2, also has an issue with the sampling pump. It will not hold prime. Mr. Palmer said he thinks it has a damaged suction lift line. This needs to be repaired and resolved.

Hach does not sell 1720E turbidimeters now because they have transitioned to a completely different unit TU5300. Replacement cost for this one 1720E is in the $2,000 range. However, Hach can refurbish 1720E units and I suggest that the Utility explore this option. For the short run, the raw water 1720E head can be switched to the IFE #2 turbidimeter once the sampling pump issue is resolved. Once the damaged 1720E unit is returned, it can go into the raw water location. Minor programing of the sc200 controllers is needed and I can assist the operator from my office on how to accomplish this.

Additional turbidimeter issues. The rotameters controlling water flow to the turbidimeters are essentially kaput. Flows to the turbidimeters were next to nil and I adjusted to increase but not to control. Hach says that the sweet spot for water flows to the turbidimeters is 300ml/min. These need to be removed and simple valves installed in the feed line and measuring flow with the discharge of the turbidimeters. Over time, plastic tubing to and from the turbidimeters become dirty and/or brittle. This plastic tubing can be purchased from a local hardware store in bulk rolls. Replacement every few years or as needed is recommended. I would also suggest that an additional SD card should be purchased for the IFE sc200 controllers; Mr. Palmer is switching a single card between the two units. Seems a bit awkward to collect important data.

Hach recommends that the 1720E turbidimeters should be calibrated every 3 months and bulbs replaced annually. The EPA may have the Utility on an increased schedule. Each time a calibration is performed, a new bottle of StablCal is needed at a cost of about $160 per bottle. Annual bulb costs are about $65 per bulb (6 bulbs). Mr. Palmer is fully trained on performing the calibration of the 1720E turbidimeters and performing log entries into the sc200 controllers. I also suggested that it be noted in the daily WTP log of the calibration as well as lot # of the StablCal and expiration date.

Control of Coagulant Addition:

The Warm Spring Treatment Plant uses a primary coagulant, Aluminum Chlorohydrate (ACH), to destabilize and coagulate particles in the raw water, which will normally all fall out in the sedimentation chamber. The process has operated for extended time without accurately knowing the correct dosage that is required at any particular time. In

essence the operators have been guessing at the dosage because they were not jar testing nor was the Streaming Current Monitor (SCM) was either off line or inaccurate.

The operators need to develop their jar testing skills both for a fall back if the SCM fails again and for a check on the accuracy of the SCM. This skill is a normal requirement in the water treatment industry and each operator should be proficient in this skill.

The ChemTrac SCM in the WTP was, in prior visits, not operating power wise, because power is being supplied by a circuit that somehow is cross connected with one of the pumps in the raw water pump room. When that pump was out of service so was the SCM. The SCM should be independent of any other power circuit.

I took a close look at the SCM in order to discern why it was not operating correctly. The unit was stuck in the +1.90 SCU range and was not drifting which is normal. I found that there was no water going through the SCM probe. This condition normally kills the probe which would need to be replaced. The sample pump was working but a fine mesh screen was totally clogged with floc-snot. Mr. Courtney and I removed the screen and cleaned the housing and reestablished the water flow. This screen should not be inline because it strains out some of the material, i.e. floc, that the SCM needs to measure.

Next, we removed the SCM probe to clean. There was some grit in the probe but it looked dirty with slimy organic residue. In the lab I cleaned the probe with Comet Soft Scrub and vigorous scrubbing with bottle brushes. This is the best cleaner for SCM probes to remove the organic slime which builds up on the probe. The probe parts are fragile but easily disassembled, the operators need to take time and do the job carefully.

Upon reassembly, we found that the SCM began to measure the charge in the water. I was amazed that the unit had not been damaged beyond repair. Once the SCM stabilized it showed a drifting value of +1.34 SCUs. This is an indication that the WTP was being overdosed with ACH. I began to slowly reduce the ACH injection using speed on the LMI pump from 26 to eventually 13. Stroke remained at 30. This maintained a steady 0.00 SCU. By reducing the speed to 13 showed that the plant was being dosed approximately 2x the amount of ACH that which is required. In my experience when operators are left to guess at the correct dosage, they always over dose. Overdosing sometimes pass through the filters and can manifest in in the first WST (Tee Wees) as a slimy coagulant layer at the bottom of the WST. An inspection from the upper hatch and a bright light source will usually determine if there is a layer in the WST. Adjustment of the speed on the LMI pump yielded about a 0.08-0.09 SCU change of the SCM.

The ChemTrac SCM is the most important piece of equipment in the coagulant system unless jar testing is used to adjust coagulant. Jar Testing should be a fall back and used to verify the SCM. Maintaining the SCM is paramount for the operators. This was explained to Mr. Courtney repeatedly while I was showing him how to clean the probe and remove and replace it on the SCM. Daily check should come with a blow-down of

the hydro-cyclone and that there is water passing through the probe. Every day, by the hour, the operator needs to check the SCM value and make appropriate adjustments if needed. If the unit is to the positive cut back on the ACH. If low, add more ACH. This is not automatic and it is part of proper operations to make this manual adjustment. On a weekly basis the probe needs to be pulled apart and cleaned of the organic slime build up using the Comment Soft Scrub. If the slime builds up the SCM will begin to act up and not respond. This is an operator duty found in other WTPs using SCMs.

Mr. Courtney's shift was ending and since there was not an operator with experience there for swing shift, I did not get a chance to stop the chlorine injection and observe any changes in the SCM. If there was a change to the positive and its relative degree of deflection would indicate a relative interference of the chlorine with the ACH. I would still like to do this experiment with Mr. Courtney carrying it out. Response time to the SCM is about 1.5 minutes, which means the chlorine would not be off for very long.

Another item I would recommend is a flow meter that reads out in GPM should be installed or upgraded upstream of the static mixer. The current meter is nothing but a totalizer. Mr. Courtney is using flows based on new line shaft turbine pump values. This can be deceiving because without bowl/impeller adjustments, line shaft turbine pumps have the tendency to slip in their flow. Plus, if doing jar testing, an accurate value of plant inflow is needed for proper dosage calculations. Contact me if a new flow meter is desired, there are many options that can be added to measure this flow.

Safety Issues:

Two serious safety issues I found while at the WTP:

1. Throughout the WTP there is extremely poor lighting due to the lack of bulb replacement. Some areas it is downright dark and difficult to work in without axillary lighting.
2. There is a ¼-inch standing water in front of the motor control panel, which feed the three each 400 hp line shaft turbine pumps in the finished water room. To compound this, I was told that one of the pumps need to be started locally at the panel while standing in the water as apposed to starting from the SCADA system. There is extremely high voltage in this panel and the operators are placed in danger of arc flash. Leaks need to be fixed.

RECOMMENDATION(S) AND/OR CONCLUSION(S):

1. The turbidimeters are all calibrated (except for IFE #2, which is out of service) and Mr. Palmer is trained to accomplish the task. Hach recommends every 90 days unless EPA has set a schedule of calibration.
2. Replace all tubing at the turbidimeters (and chlorine analyzer CL-17).
3. Either replace the bad 1720E turbidimeter with an upgraded unit or send the unit out to be refurbished by Hach.

4. Switch the raw water turbidimeter with the bad IFE #2 turbidimeter. I can help remotely with this but the procedure is in the turbidimeter manuals. Raw water turbidity is not required by EPA, IFE #2 is.
5. Maintain the ChemTrac SCM in operation and to adjust manually the ACH dosage. This reading should be made at least hourly when producing water. Recording the value is recommended and interpret the results to make operational adjustments.
6. Clean the SCM probe weekly and blow down hydro-cyclone daily. Verify water supply to the probe.
7. Develop and maintain competency with jar testing. This is the fall back for coagulant dosing if the ancient SCM develops issues or completely fails.
8. Install a water meter just upstream of the static mixer that reads in GPM as well as totalizing. This is an essential flow measurement for proper dosing. I can supply meter suggestions that are relatively inexpensive and easy to install.
9. The LMI pump settings for speed and stroke should be switched. Speed should always be larger than stroke. The B921-86HV pump being used is bordering on the too big at the required dosage setting following the SCM values. Recommend using the available smaller pumps in order to more closely control the coagulant dosing. Mr. Courtney is aware of this.
10. Being competent water operators, involve constant development of new skills and refreshing old skills. There are many free training videos on YouTube for reference. In particular the AWWA and the American Water College (https://www.youtube.com/user/AmericanWaterWorks/videos https://www.youtube.com/user/AmericanWaterCollege/videos) series' of videos the explain things like Jar Testing, distribution valves, pumps, plant treatment, math etc.. Both water and sewer videos are available and most are 10 minutes or less. I suggest the operators watch these for review and new subjects.

As before, I am available to assist the utility with all three of the water systems that the Utility maintains. With a little work and some investment, the Dry Creek WTP can improve operations and return to providing high quality water to the Warm Springs customers. Please call me if there is any questions about what is included in this Trip Report.

Laddie E. Folster

cc.

Mr. Travis Wells, GM, Public Works Department, Warm Springs Tribe
Mr. Chico Holliday, Water Wastewater Supervisor, Warm Springs Tribe
Mr. Steve Courtney, Lead Water Treatment Operator, Warm Springs Tribe
Capt. Mat Martinson, Director SFC, IHS Portland, OR
CDR Steve Sauer, District Engineer, IHS Spokane, WA
CDR Craig Haugland, Senior Environmental Engineer, IHS Port Angles, WA
Lt. Derek Hancey, Environmental Engineer, IHS Portland, OR

From: Tucker, Michelle
To: Duvil, Ricardi; Jennings, Marie
Subject: FW: Warm Springs CCRs (Sidwalter, Simasho, Warm Springs)
Date: Monday, November 19, 2018 4:16:42 PM
Attachments: Sidwalter CCR 2018 FINAL.pdf
Simnasho-Schoolie CCR 2018 FINAL.pdf
WSWTP CCR 2018 FINAL.pdf
CCRCert Form R10_2016 WARM SPRINGS CWS 2018.08.17 signed.pdf
CCRCert Form R10_2016 SIMNASHO SCHOOLIE CWS 2018.08.17 signed.pdf
CCRCert Form R10_2016 SIDWALTER 2018.08.17 signed.pdf

So you guys can see that the COO was aware of some of the issues

From: Alyssa Macy <alyssa.macy@wstribes.org>

Sent: Friday, August 17, 2018 1:00 PM

To: Tucker, Michelle <Tucker.Michelle@epa.gov>; Manheimer, Jenna <Manheimer.Jennifer@epa.gov>; Bouck, Steve <Bouck.Steve@epa.gov>

Cc: Travis Wells <travis.wells@wstribes.org>; Chico Holliday <chico.holliday@wstribes.org>

Subject: Warm Springs CCRs (Sidwalter, Simasho, Warm Springs)

Good afternoon,
I've attached copies of the CCRs that were distributed for the Sidwalter CWS, Simnasho-Schoolie CWS and the Warm Springs WTP. I've also included the CCR Certification form for each of these systems.
We greatly appreciate your assistance as we've worked through this process.
I am now working on the required NOV paperwork.
Alyssa

Alyssa Macy
Chief Operations Officer, Confederated Tribes of Warm Springs, Oregon
541-553-3212
https://warmsprings-nsn.gov/
1233 Veterans Street / PO Box 455, Warm Springs, OR 97761

Sidwalter Community Water System
Annual Water Quality Report for 2017

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Environmental Protection Agency/Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

The Sidwalter water system is owned by the Confederated Tribes of the Warm Springs and is operated by the Branch of Public Utilities (BPU) of the Confederated Tribes of Warm Springs**.** A single ground water well is used to supply our customers with water. There are 37 service connections that receive water from the Sidwalter water system. There is one 200,000 gallon storage tank to hold drinking water for distribution. The Sidwalter water system uses sodium hypochlorite in order to disinfect your drinking water prior to distributing it for consumption. Disinfection reduces or eliminates illnesses that can be acquired through drinking water. The sodium hypochlorite added to your drinking water kills any microbes that may be present in source water.

Source water assessment and its availability

There has not been a source water assessment performed on this system as of 2017. Source water assessments are meant to evaluate the drinking water source and system for the threat of potential contamination.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some

cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

If you have questions about this report or about your drinking water quality, please contact Steve Courtney, Sr. at (541) 553-1472**.** You may also stop in to the Branch of Public Utilities offices at 2253 Rehab Street, Warm Springs, Oregon, 97761**.** Please be sure to read any notices delivered to your home from the Sidwalter water system. Notices will also be posted at the Warm Springs Market and Tribal Administration Building**.**

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.

- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Sidwalter Community Water System
Annual Water Quality Report for 2017

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Sidwalter Community Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	09/22/2015	1.3	1.3	0.08	0	ppm	N	Erosion of natural deposits; Leaching from

								wood preservatives; Corrosion of household plumbing systems.
Lead	09/22/2015	0	15	10	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	2017	0.4	0.3 – 0.4	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)	08/18/2015	7.9	7.9 – 7.9	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes	04/19/2013	3	3 – 3	No goal for the total	80	ppb	N	By-product of drinking water disinfection

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Fluoride	08/27/2013	0.339	0.339 – 0.339	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharges from fertilizer and aluminum factories.

Sidwalter Community Water System
Annual Water Quality Report for 2017

Consumer Confidence Rule

The Consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems.

Violation Type	Violation Begin	Violation End	Violation Explanation
CCR Adequacy/Availability/Content	10/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water.
CCR Report	07/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.
CCR Report	07/01/2017	09/11/2017	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.

Not all sample results may have been used for calculating the highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Sidwalter Community Water System
Annual Water Quality Report for 2017

Ground Water Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to Address Deficiency	11/30/2014	2017	We failed to properly respond to a significant deficiency in our water system.

The Ground Water Rule specifies the appropriate use of disinfection while addressing other components of ground water systems to ensure public health protection.

Significant Deficiencies

The Sidwalter water system is not currently in compliance with EPA standards. A Sanitary Survey was conducted by Indian Health Services to inspect the Sidwalter Water System on May 23, 2017**.** A report dated April 24, 2018 was sent to the Sidwalter water system informing them of the significant deficiencies identified during the Sanitary Survey and requesting a Corrective Action Plan to outline how the Sidwalter water system will fix the identified deficiencies. The following significant deficiencies have not been addressed at the time of this report:

1. A sample tap is not provided on the well discharge pipe following treatment
2. The well vent is not screened with the return bend facing downward and terminating 18-inches above ground level or above minimum flood level, whichever is higher.
3. Conduits and junction boxes are not sealed to prevent contaminants from entering the well casing.

The Sidwalter water system has failed to address these issues. They have not provided a Corrective Action Plan (CAP) to EPA outlining their plan to address these issues. The Sidwalter water system has not provided a plan or schedule to EPA to correct these issues. We are currently working with a consultant to get the CAP turned in to EPA.

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)

Sidwalter Community Water System
Annual Water Quality Report for 2017

Unit Descriptions	
MFL	MFL: million fibers per liter, used to measure asbestos concentration
mrem	millirems per year (a measure of radiation absorbed by the body).
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
ALG	ALG: The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCL's are based on running annual average of monthly samples
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. Coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Sidwalter Community Water System
Annual Water Quality Report for 2017

Important Drinking Water Definitions	
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Definitions:
Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

For more information please contact:

Travis Wells, Branch of Public Utilities General Manager at (541) 553-3246

Warm Springs Water Treatment Plant Community Water System
Annual Water Quality Report for 2017

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Environmental Protection Agency/Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

The Warm Springs Water Treatment Plant water system is owned by the Confederated Tribes of the Warm Springs and is operated by the Branch of Public Utilities (BPU) of the Confederated Tribes of Warm Springs**.** The Warm Springs Water Treatment Plant draws surface water from the Deschutes River just upstream from Dry Creek to supply our customers with water. Raw water from the DesChutes River is drawn into the plant by gravity where treatment chemicals are then added. Some of the chemicals used are Aluminum Chlorohydrate (ACH), Activated Carbon (taste and odor), Polymer (coagulant) and Chlorine (disinfectant). Once the chemicals are added, the treated water then enters the settling basins where the coagulated particles (called floc at this point) are allowed to settle out and the clarified water is passed to the filters for the final phase of treatment before being pumped to the distribution system. Once the finished water is collected in a clear well, it is then pumped out of the plant by two 400hp motors at a rate of approximately 2,800 gallons per minute. There are 1,497 service connections that receive water from the Warm Springs Water Treatment Plant water system. There are eight tanks totaling 6.75M gallons of potable drinking water storage for distribution. The Warm Springs Water Treatment Plant water system uses chlorine gas in order to disinfect your drinking water prior to distributing it for consumption. Disinfection reduces or eliminates illnesses that can be acquired through drinking water. The chlorine gas added to your drinking water kills any microbes that may be present in source water.

Warm Springs Water Treatment Plant Community Water System
Annual Water Quality Report for 2017

Source water assessment and its availability

There has not been a source water assessment performed on this system as of 2017. Source water assessments are meant to evaluate the drinking water source and system for the threat of potential contamination.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

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Water Conservation Tips

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- Water plants only when necessary.
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- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.

- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Warm Springs Water Treatment Plant Community Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not

vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the tables.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	09/13/2016	1.3	1.3	0.055	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	2017	0.4	0.3 - 0.4	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)	2017	52	16.7 – 51.9	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes	2017	63	13.7 – 62.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Fluoride	06/12/2012	0.202	0.202 - 0.202	4	1.0	ppm	N	Erosion of natural deposits; Water additive which

								promotes strong teeth; discharge from fertilizer and aluminum factories.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Combined Radium 226/228	09/15/2015	0.974	0.974 – 0.974	0	5	pCi/L	N	Erosion of natural deposits.

Not all sample results may have been used for calculating the highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Consumer Confidence Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
CCR Adequacy/Availability/Content	10/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water.
CCR Report	07/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.
CCR Report	07/01/2017	09/11/2017	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking

			water.

The Consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems.
Not all sample results may have been used for calculating the highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Haloacetic Acids (HAA5)
Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine (DBP), Major	01/01/2015	08/31/2017	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.

Total Trihalomethanes (TTHM)
Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine (DBP), Major	01/01/2015	08/31/2017	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.

Significant Deficiencies
The Warm Springs Water Treatment Plant system is not currently in compliance with EPA standards. A Sanitary Survey was conducted by Indian Health Services to inspect the Water Treatment Plant Water System on January 27, 2015. A report dated August 24, 2015 was sent to the Water Treatment Plant water system informing them of the significant deficiencies identified during the Sanitary Survey and requesting a Corrective Action Plan to outline how the Water Treatment Plant water system will fix the identified deficiencies. The following significant deficiencies have not been addressed at the time of this report:
1. Improper Turbidity Calibration

2. Improper Instrumentation or Process Controls.
3. Improper Contact Time before First Customer.
4. Sedimentation Basin Needs Settled Solids Removed.
5. Corrosion on Tank Vent Stack Welded Area in Need or Repair.
6. Septic System has failed and Surfacing Wastewater is Flowing toward Backwash Basins and River.
7. River Intake Air Scour System Inoperative.

The Warm Springs Water Treatment Plant water system has failed to address these issues. They have not provided a Corrective Action Plan (CAP) to EPA outlining their plan to address these issues. The Water Treatment Plant water system has not provided a plan or schedule to EPA to correct these issues. We are currently working with a consultant to get the CAP turned in to EPA.

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
MFL	MFL: million fibers per liter, used to measure asbestos concentration
mrem	millirems per year (a measure of radiation absorbed by the body).
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.
Important Drinking Water Definitions	
Term	**Definition**
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
ALG	ALG: The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Warm Springs Water Treatment Plant Community Water System
Annual Water Quality Report for 2017

Unit Descriptions	
Avg	Regulatory compliance with some MCL's are based on running annual average of monthly samples
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. Coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Definitions:
Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Warm Springs Water Treatment Plant Community Water System
Annual Water Quality Report for 2017

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

For more information please contact:

Travis Wells, Branch of Public Utilities General Manager at (541) 553-3246

EPA United States Environmental Protection Agency

Consumer Confidence Report Certification

40 CFR 141- Subpart O requires all community water systems to send an annual Consumer Confidence Report (CCR) to all customers. The CCR rule requires:

1. Deliver CCR to customers and EPA by July 1.
2. Certify to EPA that the report was delivered and contained correct information by October 1.

Submit to:

Steve Bouck
EPA Region 10, Drinking Water Unit
1200 Sixth Ave, Ste. 900 (OWW-193)
Seattle, WA 98101

CERTIFICATION FOR:

Water System Name: Sidwalter Community Water System **System ID Number:** 104101101

Reservation (facility name if not on reservation): Warm Springs Indian Reservation

Calendar Year Covered in Report: 2017

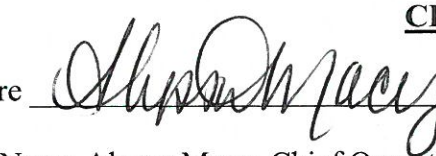
Method of Distribution (check all that apply):

_X_ Separate Mailing ___ Bill Insert __X__ Public Poster

_X_ Internet _X_ Other (describe): *Insert included in July 3, 2018 edition of the Spilyay Tymoo tribal newspaper. Insert printed CCR in entirety. Newspaper distributed locally and mailed to all Warm Springs PO Boxes. PO Boxes serve residents of Warm Springs, Simnasho, and Sidwalter. There is no mail home delivery on the reservation. Documents can be downloaded on the tribal website: https://warmsprings-nsn.gov/program/public-utilities-branch/*

I confirm that this Consumer Confidence Report has been distributed in accordance with the Consumer Confidence Report Requirement (40 CFR 141, Subpart O) and that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the EPA Region 10 Drinking Water Unit.

CERTIFIED BY:

Signature  Date _08/17/18_____

Printed Name Alyssa Macy, Chief Operations Officer

Date of Certification:_08/17/18___ Date of CCR Distribution:_07/03/18_____

Phone _541-553-3212_____ Fax __541-553-2236_____

Email __alyssa.macy@wstribes.org_____

EPA Region 10- Drinking Water Unit, (206)553-6253

EPA United States Environmental Protection Agency

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Steve Bouck
EPA Region 10, Drinking Water Unit
1200 Sixth Ave, Ste. 900 (OWW-193)
Seattle, WA 98101

CERTIFICATION FOR:

Water System Name: Simnasho-Schoolie CWS **System ID Number:** 104101102

Reservation (facility name if not on reservation): Warm Springs Indian Reservation

Calendar Year Covered in Report: 2017

Method of Distribution (check all that apply):

_X_ Separate Mailing ___ Bill Insert __X__ Public Poster

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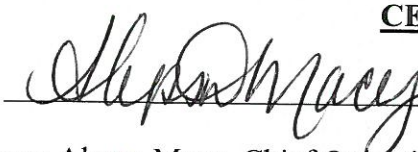
CERTIFIED BY:

Signature  Date _08/17/18_____

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Submit to:

Steve Bouck
EPA Region 10, Drinking Water Unit
1200 Sixth Ave, Ste. 900 (OWW-193)
Seattle, WA 98101

CERTIFICATION FOR:

Water System Name: Warm Springs CWS **System ID Number:** 104101247

Reservation (facility name if not on reservation): Warm Springs Indian Reservation

Calendar Year Covered in Report: 2017

Method of Distribution (check all that apply):

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Printed Name Alyssa Macy, Chief Operations Officer

Date of Certification:_08/17/18___ Date of CCR Distribution:_07/03/18_____

Phone _541-553-3212_____ Fax __541-553-2236_____

Email __alyssa.macy@wstribes.org_____

EPA Region 10- Drinking Water Unit, (206)553-6253

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Is my water safe?
We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Environmental Protection Agency/Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?
The Simnasho-Schoolie Community Water System is owned by the Confederated Tribes of the Warm Springs and is operated by the Branch of Public Utilities (BPU) of the Confederated Tribes of Warm Springs**.** Two ground water wells are used to supply our customers with water. There are 63 service connections that receive water from the Simnasho-Schoolie water system. There are three tanks totaling 294,000 gallons of potable drinking water storage for distribution. The Simnasho-Schoolie water system uses sodium hypochlorite in order to disinfect your drinking water prior to distributing it for consumption. Disinfection reduces or eliminates illnesses that can be acquired through drinking water. The sodium hypochlorite added to your drinking water kills any microbes that may be present in source water.

Source water assessment and its availability
There has not been a source water assessment performed on this system as of 2017. Source water assessments are meant to evaluate the drinking water source and system for the threat of potential contamination.

Why are there contaminants in my drinking water?
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs,

and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

If you have questions about this report or about your drinking water quality, please contact Steve Courtney, Sr. at (541) 553-1472**.** You may also stop in to the Branch of Public Utilities offices at 2253 Rehab Street, Warm Springs, Oregon, 97761**.** Please be sure to read any notices delivered to your home from the Simnasho-Schoolie water system. Notices will also be posted at the Warm Springs Market and Tribal Administration Building**.**

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.

- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.

- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Simnasho-Schoolie Community Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	09/22/2015	1.3	1.3	0.012	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	09/22/2015	0	15	3	0,	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	2017	0.4	0.3 - 0.4	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)	2017	18.8	18.8 - 18.8	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes	2017	28.9	28.9 - 28.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Combined Radium 226/228	09/15/2015	1.5	1.5 – 1.5	0	5	pCi/L	N	Erosion of natural deposits.

Not all sample results may have been used for calculating the highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Consumer Confidence Rule

The Consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems.

Violation Type	Violation Begin	Violation End	Violation Explanation
CCR Adequacy/Availability/Content	10/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water.
CCR Report	07/01/2016	01/03/2017	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.
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Not all sample results may have been used for calculating the highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Haloacetic Acids (HAA5)

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine (DBP), Major	01/01/2015	08/31/2017	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.

Total Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine (DBP), Major	01/01/2015	08/31/2017	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
MFL	MFL: million fibers per liter, used to measure asbestos concentration
mrem	millirems per year (a measure of radiation absorbed by the body).
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Important Drinking Water Definitions	
Term	**Definition**
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
ALG	ALG: The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCL's are based on running annual average of monthly samples
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. Coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Simnasho-Schoolie Community Water System
Annual Water Quality Report for 2017

Important Drinking Water Definitions	
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Definitions:
Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

For more information please contact:

Travis Wells, Branch of Public Utilities General Manager at (541) 553-3246

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:25 PM
To: Opalski, Dan; Chung, Angela; Jennings, Marie; Steiner-Riley, Cara; Contreras, Peter; Thurmon, Clarke; MacIntyre, Mark
Cc: Duvil, Ricardi
Subject: FW: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018
Attachments: Warm Springs Water System_Turbidity_(TT)_Violation_ 11.19.2018.pdf; SWTRs Turbidity Exceedance Tier II - Public_Notice.doc; Warm Spring Water System_PUBLIC NOTICE CERTIFICATION FORM_November_19_ 2018.doc

Hi All:

Please see attached letter for Turbidity Treatment Technique Violation along with Tier II public notice requirements for Warm Springs Water Treatment.

Below is my email to Travis Wells, General Manager at Warm Springs Water System.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:19 PM
To: 'Travis Wells' <travis.wells@wstribes.org>
Cc: Alyssa Macy <alyssa.macy@wstribes.org>; Jennings, Marie <Jennings.Marie@epa.gov>; 'Martinson, Mathew J (IHS/POR)' <Mathew.Martinson@ihs.gov>; 'Folster, Laddie (IHS/POR)' <Laddie.Folster@ihs.gov>; Manheimer, Jenna <Manheimer.Jennifer@epa.gov>; Clark, Johnny <Clark.Johnny@epa.gov>; Schuster, Jane <schuster.jane@epa.gov>; Bouck, Steve <Bouck.Steve@epa.gov>; Robinson, Lorie <Robinson.Lorie@epa.gov>; Affeldt, Chris <Affeldt.Christopher@epa.gov>; Blust, Molly E. <blust.molly@epa.gov>
Subject: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018

Dear Mr. Wells:

As we discussed from our previous conversation, I have attached our Turbidity Treatment Technique Violation letter along with Tier II public notice requirements. As you know, turbidity must be less than or equal to 0.3 NTU in at least 95 % of the measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period. Failure to meet the Combined Filter Effluent (CFE) requirements is a treatment technique violation.

If you have any questions or need help with the public notice requirements, feel free to contact me.

Thank you for your prompt attention to this important matter.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3123

OFFICE OF
WATER AND
WATERSHEDS

November 19, 2018

Travis Wells, General Manager
Warm Springs Water Treatment Plant
Confederated Tribes of Warm Springs
P.O. Box 1196
Warm Springs, Oregon 97761

Re: **Treatment Technique (TT) Violation: Exceedance of Monthly Turbidity- 0.3 Nephelometric Turbidity Units (NTU)-Federal Violation Code # 44**
Warm Springs Water Treatment Plant PWS ID# 104101247

Dear Mr. Wells:

We recently reviewed your monthly report for Combined Filter Effluent(CFE) Turbidity and your results for October 2018 showed that **13.77%** of turbidity measurements were above **0.3 NTU** and **86.23%** were below the standard turbidity level.

Under the Surface Water Treatment Rule(SWTR), for systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least **95%** of measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period.

It is important to know that the SWTR established treatment technique requirements for turbidity to protect public health. Turbidity is an indicator for (1) filtration efficiency for removal of pathogens and other particles, and (2) the treatability of the water by disinfection. A high turbidity level indicates the potential for pathogen breakthrough and interference with disinfection efficiency. In addition, your water system must calibrate the continuous turbidity monitor(s) at least once per week according to the procedures established in Method 2130 B of the 17th edition of Standard Methods for the Examination of Water and Wastewater.

Based on the monthly CFE turbidity report provided by your system on November 12, 2018, our review showed that the Warm Springs water system has failed to meet the turbidity level treatment technique requirements under the SWTR. **As a result, this is a treatment technique violation and requires Tier 2 public notification.**

A public water system that violates a TT is required to notify the public of this TT violation as soon as practical, but no later than 30 days after learning of the violation, so please make sure to notify your customers no later than 30 days after you receive this letter. The notice must be delivered by hand or by mail. It must also be made available to other persons served by the water system that have not been reached by the methods listed above, for example via newspaper, email or by posting in a public

location. Please see the enclosure titled "Public Notification Delivery Instructions" which provides more details about public notification delivery. You must also send a copy of the notice that you deliver to your customers as well as a completed certification form (enclosed) to the Environmental Protection Agency no later than ten days after you notify your customers.

We have drafted a public notice which you can distribute to your customers (see enclosure with the heading "Important Information about Your Drinking Water"). If you would like to prepare your own public notice, please contact Ricardi Duvil, PhD., P.E., SWTR manager, at duvil.ricardi@epa.gov or (206) 553-2578 so he can advise you as to which sections of this draft notice must be included in your notice exactly as written. If you would like to use the enclosed version of the notice, but would like to change something in it, for example, the water system contact, please contact Ricardi. He can make the change and send the revised notice to you, or he can send you an electronic copy of the notice and you can make changes yourself.

If you have any questions, please contact Ricardi Duvil, Ph.D., P.E., SWTR Manager, at the email address and phone number above.

Sincerely,

Marie Jennings
Drinking Water Unit Manager

Cc: Alyssa Macy, Chief Operations Officer

Instructions for SWTRs Turbidity Exceedance Notice

Template on Reverse

Since surface water treatment filtration treatment technique violations require Tier 2 notification, you must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation [40 CFR 141.203(b)]. This template may also be adapted for use with turbidity MCL violations. Your primacy agency may have more stringent requirements for treatment technique violations (e.g., it may require you to provide water from an alternate source). Check with your agency to make sure you meet all requirements. In addition:

For Exceedances of Single Turbidity Limits	For Exceedances of Monthly Turbidity Limits
You must consult with your primacy agency as soon as practical but within 24 hours of learning of the violation. During the consultation, the agency may choose to elevate your turbidity exceedance to Tier 1. If consultation does not occur, the violation is automatically elevated to Tier 1 (use Template 1-7). For a Tier 2 notice, describe your violation as follows in the second paragraph of the notice: "Normal turbidity levels at our plant are [number] turbidity units. A water sample taken [date] showed levels of [number] turbidity units. This was above the standard of [standard] units. Because of these high levels of turbidity, there is an increased chance that the water may contain disease-causing organisms."	**Use the following language to describe your violation and insert into the second paragraph of the template:** **"Water samples for [month] showed that [percentage] percent of turbidity measurements were over [standard] turbidity units – the standard is that no more than 5 percent of samples may exceed [standard] turbidity units per month. The turbidity levels are relatively low. However, their persistence is a concern. Normal turbidity levels at our plant are [number] units."**

Community systems must use one of the following methods [40 CFR 141.203(c)]:

- Hand or direct delivery
- Mail, as a separate notice or included with the bill

Noncommunity systems must use one of the following methods [40 CFR 141.203(c)]:

- Posting in conspicuous locations
- Hand delivery
- Mail

In addition, both community and noncommunity systems must use *another* method reasonably calculated to reach others if they would not be reached by the first method [40 CFR 141.203(c)]. Such methods could include newspapers, e-mail, or delivery to community organizations. If you mail, post, or hand deliver, print your notice on your system's letterhead, if available.

The notice on the reverse is appropriate for mailing, posting, or hand delivery. If you modify this notice, you must still include all required PN elements from 40 CFR 141.205(a) and leave the mandatory language unchanged (see below).

Mandatory Language

Mandatory language on health effects (from Appendix B to Subpart Q) must be included as written (with blanks filled in) and is presented in this notice in italics and with an asterisk on either end.

You must also include standard language to encourage the distribution of the public notice to all persons served, where applicable [40 CFR 141.205(d)]. This language is also presented in this notice in italics and with an asterisk on either end.

Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with filtration treatment technique violations. Depending on the corrective action you are taking, you can use one or more of the following statements, if appropriate, or develop your own text:

- We added chemicals that reduce turbidity.
- We sampled both untreated and treated water for the presence of coliform bacteria.
- We monitored chlorine levels and adjusted them as needed to compensate for the filtration problems.
- We inspected and cleaned the filters.

After Issuing the Notice

Make sure to send your primacy agency a copy of each type of notice and a certification that you have met the public notice requirements within ten days after you issued the notice [40 CFR 141.31(d)].

SWTRs Turbidity Exceedance Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Warm Springs Water System PWS ID# 104101247
Did Not Meet Treatment Requirements-Turbidity

Our water system recently violated a drinking water requirement. Although this was not an emergency, as our customers, you have a right to know what happened, what you should do, and what we did (are doing) to correct this situation.

We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering the water supply. [**Insert appropriate description of the violation from instructions on the previous page.]**

What should I do?

- There is nothing you need to do. You do not need to boil your water or take other actions. We do not know of any contamination, and none of our testing has shown disease-causing organisms in the drinking water.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been, you would have been notified within 24 hours. **Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.** These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?

[**Describe the corrective actions and when the system returned or expects to return to compliance.]**

For more information, please contact [name of contact] at [phone number] or [mailing address].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by **[system].** Water System ID#: _____.
Date distributed: _____.

PUBLIC NOTICE CERTIFICATION FORM

PUBLIC WATER SYSTEM NAME Warm Springs Community Water System

PUBLIC WATER SYSTEM ID 104101247

DESCRIPTION OF VIOLATION(S) TURBIDITY EXCEEDANCE

VIOLATION DATE(S) November 19, 2018

The public water system named above hereby affirms that public notice has been provided to consumers in accordance with the delivery, content, and format requirements and deadlines as required by 40 CFR Part 141 Subpart Q.

☐ Consultation with EPA (if required) on the following date(s)_____

☐ Notice distributed by the following method(s) (for example, mail, posting, etc. _____

_____

on the following date(s)_____

☐ Notice posted at the following location(s) _____

_____

on the following date(s)_____

_____ _____

Signature of owner or operator date

****

Send completed form and copy of public notice to EPA by

fax to (206) 553-1280 or

mail to Drinking Water Unit
Environmental Protection Agency
1200 Sixth Ave, Suite 155, OWW-193
Seattle, WA 98101-3123

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:25 PM
To: Opalski, Dan; Chung, Angela; Jennings, Marie; Steiner-Riley, Cara; Contreras, Peter; Thurmon, Clarke; MacIntyre, Mark
Cc: Duvil, Ricardi
Subject: FW: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018
Attachments: Warm Springs Water System_Turbidity_(TT)_Violation_ 11.19.2018.pdf; SWTRs Turbidity Exceedance Tier II - Public_Notice.doc; Warm Spring Water System_PUBLIC NOTICE CERTIFICATION FORM_November_19_ 2018.doc

Hi All:

Please see attached letter for Turbidity Treatment Technique Violation along with Tier II public notice requirements for Warm Springs Water Treatment.

Below is my email to Travis Wells, General Manager at Warm Springs Water System.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:19 PM
To: 'Travis Wells' <travis.wells@wstribes.org>
Cc: Alyssa Macy <alyssa.macy@wstribes.org>; Jennings, Marie <Jennings.Marie@epa.gov>; 'Martinson, Mathew J (IHS/POR)' <Mathew.Martinson@ihs.gov>; 'Folster, Laddie (IHS/POR)' <Laddie.Folster@ihs.gov>; Manheimer, Jenna <Manheimer.Jennifer@epa.gov>; Clark, Johnny <Clark.Johnny@epa.gov>; Schuster, Jane <schuster.jane@epa.gov>; Bouck, Steve <Bouck.Steve@epa.gov>; Robinson, Lorie <Robinson.Lorie@epa.gov>; Affeldt, Chris <Affeldt.Christopher@epa.gov>; Blust, Molly E. <blust.molly@epa.gov>
Subject: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018

Dear Mr. Wells:

As we discussed from our previous conversation, I have attached our Turbidity Treatment Technique Violation letter along with Tier II public notice requirements. As you know, turbidity must be less than or equal to 0.3 NTU in at least 95 % of the measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period. Failure to meet the Combined Filter Effluent (CFE) requirements is a treatment technique violation.

If you have any questions or need help with the public notice requirements, feel free to contact me.

Thank you for your prompt attention to this important matter.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3123

OFFICE OF
WATER AND
WATERSHEDS

November 19, 2018

Travis Wells, General Manager
Warm Springs Water Treatment Plant
Confederated Tribes of Warm Springs
P.O. Box 1196
Warm Springs, Oregon 97761

Re: **Treatment Technique (TT) Violation: Exceedance of Monthly Turbidity- 0.3 Nephelometric Turbidity Units (NTU)-Federal Violation Code # 44**
Warm Springs Water Treatment Plant PWS ID# 104101247

Dear Mr. Wells:

We recently reviewed your monthly report for Combined Filter Effluent(CFE) Turbidity and your results for October 2018 showed that **13.77%** of turbidity measurements were above **0.3 NTU** and **86.23%** were below the standard turbidity level.

Under the Surface Water Treatment Rule(SWTR), for systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least **95%** of measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period.

It is important to know that the SWTR established treatment technique requirements for turbidity to protect public health. Turbidity is an indicator for (1) filtration efficiency for removal of pathogens and other particles, and (2) the treatability of the water by disinfection. A high turbidity level indicates the potential for pathogen breakthrough and interference with disinfection efficiency. In addition, your water system must calibrate the continuous turbidity monitor(s) at least once per week according to the procedures established in Method 2130 B of the 17th edition of Standard Methods for the Examination of Water and Wastewater.

Based on the monthly CFE turbidity report provided by your system on November 12, 2018, our review showed that the Warm Springs water system has failed to meet the turbidity level treatment technique requirements under the SWTR. **As a result, this is a treatment technique violation and requires Tier 2 public notification.**

A public water system that violates a TT is required to notify the public of this TT violation as soon as practical, but no later than 30 days after learning of the violation, so please make sure to notify your customers no later than 30 days after you receive this letter. The notice must be delivered by hand or by mail. It must also be made available to other persons served by the water system that have not been reached by the methods listed above, for example via newspaper, email or by posting in a public

location. Please see the enclosure titled "Public Notification Delivery Instructions" which provides more details about public notification delivery. You must also send a copy of the notice that you deliver to your customers as well as a completed certification form (enclosed) to the Environmental Protection Agency no later than ten days after you notify your customers.

We have drafted a public notice which you can distribute to your customers (see enclosure with the heading "Important Information about Your Drinking Water"). If you would like to prepare your own public notice, please contact Ricardi Duvil, PhD., P.E., SWTR manager, at duvil.ricardi@epa.gov or (206) 553-2578 so he can advise you as to which sections of this draft notice must be included in your notice exactly as written. If you would like to use the enclosed version of the notice, but would like to change something in it, for example, the water system contact, please contact Ricardi. He can make the change and send the revised notice to you, or he can send you an electronic copy of the notice and you can make changes yourself.

If you have any questions, please contact Ricardi Duvil, Ph.D., P.E., SWTR Manager, at the email address and phone number above.

Sincerely,

Marie Jennings
Drinking Water Unit Manager

Cc: Alyssa Macy, Chief Operations Officer

Instructions for SWTRs Turbidity Exceedance Notice

Template on Reverse

Since surface water treatment filtration treatment technique violations require Tier 2 notification, you must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation [40 CFR 141.203(b)]. This template may also be adapted for use with turbidity MCL violations. Your primacy agency may have more stringent requirements for treatment technique violations (e.g., it may require you to provide water from an alternate source). Check with your agency to make sure you meet all requirements. In addition:

For Exceedances of Single Turbidity Limits	For Exceedances of Monthly Turbidity Limits
You must consult with your primacy agency as soon as practical but within 24 hours of learning of the violation. During the consultation, the agency may choose to elevate your turbidity exceedance to Tier 1. If consultation does not occur, the violation is automatically elevated to Tier 1 (use Template 1-7). For a Tier 2 notice, describe your violation as follows in the second paragraph of the notice: "Normal turbidity levels at our plant are [number] turbidity units. A water sample taken [date] showed levels of [number] turbidity units. This was above the standard of [standard] units. Because of these high levels of turbidity, there is an increased chance that the water may contain disease-causing organisms."	**Use the following language to describe your violation and insert into the second paragraph of the template:** **"Water samples for [month] showed that [percentage] percent of turbidity measurements were over [standard] turbidity units – the standard is that no more than 5 percent of samples may exceed [standard] turbidity units per month. The turbidity levels are relatively low. However, their persistence is a concern. Normal turbidity levels at our plant are [number] units."**

Community systems must use one of the following methods [40 CFR 141.203(c)]:

- Hand or direct delivery
- Mail, as a separate notice or included with the bill

Noncommunity systems must use one of the following methods [40 CFR 141.203(c)]:

- Posting in conspicuous locations
- Hand delivery
- Mail

In addition, both community and noncommunity systems must use *another* method reasonably calculated to reach others if they would not be reached by the first method [40 CFR 141.203(c)]. Such methods could include newspapers, e-mail, or delivery to community organizations. If you mail, post, or hand deliver, print your notice on your system's letterhead, if available.

The notice on the reverse is appropriate for mailing, posting, or hand delivery. If you modify this notice, you must still include all required PN elements from 40 CFR 141.205(a) and leave the mandatory language unchanged (see below).

Mandatory Language

Mandatory language on health effects (from Appendix B to Subpart Q) must be included as written (with blanks filled in) and is presented in this notice in italics and with an asterisk on either end.

You must also include standard language to encourage the distribution of the public notice to all persons served, where applicable [40 CFR 141.205(d)]. This language is also presented in this notice in italics and with an asterisk on either end.

Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with filtration treatment technique violations. Depending on the corrective action you are taking, you can use one or more of the following statements, if appropriate, or develop your own text:

- We added chemicals that reduce turbidity.
- We sampled both untreated and treated water for the presence of coliform bacteria.
- We monitored chlorine levels and adjusted them as needed to compensate for the filtration problems.
- We inspected and cleaned the filters.

After Issuing the Notice

Make sure to send your primacy agency a copy of each type of notice and a certification that you have met the public notice requirements within ten days after you issued the notice [40 CFR 141.31(d)].

SWTRs Turbidity Exceedance Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Warm Springs Water System PWS ID# 104101247
Did Not Meet Treatment Requirements-Turbidity

Our water system recently violated a drinking water requirement. Although this was not an emergency, as our customers, you have a right to know what happened, what you should do, and what we did (are doing) to correct this situation.

We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering the water supply. [**Insert appropriate description of the violation from instructions on the previous page.]**

What should I do?

- There is nothing you need to do. You do not need to boil your water or take other actions. We do not know of any contamination, and none of our testing has shown disease-causing organisms in the drinking water.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been, you would have been notified within 24 hours. **Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.** These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?

[**Describe the corrective actions and when the system returned or expects to return to compliance.]**

For more information, please contact [name of contact] at [phone number] or [mailing address].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by **[system].** Water System ID#: _____.
Date distributed: _____.

PUBLIC NOTICE CERTIFICATION FORM

PUBLIC WATER SYSTEM NAME Warm Springs Community Water System

PUBLIC WATER SYSTEM ID 104101247

DESCRIPTION OF VIOLATION(S) TURBIDITY EXCEEDANCE

VIOLATION DATE(S) November 19, 2018

The public water system named above hereby affirms that public notice has been provided to consumers in accordance with the delivery, content, and format requirements and deadlines as required by 40 CFR Part 141 Subpart Q.

☐ Consultation with EPA (if required) on the following date(s)_____

☐ Notice distributed by the following method(s) (for example, mail, posting, etc. _____

_____

on the following date(s)_____

☐ Notice posted at the following location(s) _____

_____

on the following date(s)_____

_____ _____

Signature of owner or operator date

****

Send completed form and copy of public notice to EPA by

fax to (206) 553-1280 or

mail to Drinking Water Unit
Environmental Protection Agency
1200 Sixth Ave, Suite 155, OWW-193
Seattle, WA 98101-3123

From:	Duvil, Ricardi
To:	"Travis Wells"
Cc:	Alyssa Macy; Jennings, Marie
Subject:	FW: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018
Date:	Tuesday, December 11, 2018 11:01:00 AM
Attachments:	Warm Springs Water System_Turbidity_(TT)_Violation__11.19.2018.pdf SWTRs Turbidity Exceedance Tier II - Public_Notice.doc Warm Spring Water System_PUBLIC NOTICE CERTIFICATION FORM_November_19__2018.doc

Travis:

I wanted to remind you the Tier II public notice requirements for Warm Springs Water Treatment.

Thank you for your prompt attention to this important matter.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:25 PM
To: Opalski, Dan <Opalski.Dan@epa.gov>; Chung, Angela <Chung.Angela@epa.gov>; Jennings, Marie <Jennings.Marie@epa.gov>; Steiner-Riley, Cara <Steiner-Riley.Cara@epa.gov>; Contreras, Peter <Contreras.Peter@epa.gov>; Thurmon, Clarke <Thurmon.Clarke@epa.gov>; MacIntyre, Mark <Macintyre.Mark@epa.gov>
Cc: Duvil, Ricardi <duvil.ricardi@epa.gov>
Subject: FW: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018

Hi All:

Please see attached letter for Turbidity Treatment Technique Violation along with Tier II public notice requirements for Warm Springs Water Treatment.

Below is my email to Travis Wells, General Manager at Warm Springs Water System.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
Sent: Monday, November 19, 2018 3:19 PM
To: 'Travis Wells' <travis.wells@wstribes.org>
Cc: Alyssa Macy <alyssa.macy@wstribes.org>; Jennings, Marie <Jennings.Marie@epa.gov>; 'Martinson, Mathew J (IHS/POR)' <Mathew.Martinson@ihs.gov>; 'Folster, Laddie (IHS/POR)' <Laddie.Folster@ihs.gov>; Manheimer, Jenna <Manheimer.Jennifer@epa.gov>; Clark, Johnny <Clark.Johnny@epa.gov>; Schuster, Jane <schuster.jane@epa.gov>; Bouck, Steve <Bouck.Steve@epa.gov>; Robinson, Lorie <Robinson.Lorie@epa.gov>; Affeldt, Chris <Affeldt.Christopher@epa.gov>; Blust, Molly E. <blust.molly@epa.gov>
Subject: Warm Springs Water System Turbidity Treatment Technique Violation _11_19_2018

Dear Mr. Wells:

As we discussed from our previous conversation, I have attached our Turbidity Treatment Technique Violation letter along with Tier II public notice requirements. As you know, turbidity must be less than or equal to 0.3 NTU in at least 95 % of the measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period. Failure to meet the Combined Filter Effluent (CFE) requirements is a treatment technique violation.

If you have any questions or need help with the public notice requirements, feel free to contact me.

Thank you for your prompt attention to this important matter.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

Instructions for SWTRs Turbidity Exceedance Notice

Template on Reverse

Since surface water treatment filtration treatment technique violations require Tier 2 notification, you must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation [40 CFR 141.203(b)]. This template may also be adapted for use with turbidity MCL violations. Your primacy agency may have more stringent requirements for treatment technique violations (e.g., it may require you to provide water from an alternate source). Check with your agency to make sure you meet all requirements. In addition:

For Exceedances of Single Turbidity Limits	For Exceedances of Monthly Turbidity Limits
You must consult with your primacy agency as soon as practical but within 24 hours of learning of the violation. During the consultation, the agency may choose to elevate your turbidity exceedance to Tier 1. If consultation does not occur, the violation is automatically elevated to Tier 1 (use Template 1-7). For a Tier 2 notice, describe your violation as follows in the second paragraph of the notice: "Normal turbidity levels at our plant are [number] turbidity units. A water sample taken [date] showed levels of [number] turbidity units. This was above the standard of [standard] units. Because of these high levels of turbidity, there is an increased chance that the water may contain disease-causing organisms."	**Use the following language to describe your violation and insert into the second paragraph of the template:** **"Water samples for [month] showed that [percentage] percent of turbidity measurements were over [standard] turbidity units – the standard is that no more than 5 percent of samples may exceed [standard] turbidity units per month. The turbidity levels are relatively low. However, their persistence is a concern. Normal turbidity levels at our plant are [number] units."**

Community systems must use one of the following methods [40 CFR 141.203(c)]:

- Hand or direct delivery
- Mail, as a separate notice or included with the bill

Noncommunity systems must use one of the following methods [40 CFR 141.203(c)]:

- Posting in conspicuous locations
- Hand delivery
- Mail

In addition, both community and noncommunity systems must use *another* method reasonably calculated to reach others if they would not be reached by the first method [40 CFR 141.203(c)]. Such methods could include newspapers, e-mail, or delivery to community organizations. If you mail, post, or hand deliver, print your notice on your system's letterhead, if available.

The notice on the reverse is appropriate for mailing, posting, or hand delivery. If you modify this notice, you must still include all required PN elements from 40 CFR 141.205(a) and leave the mandatory language unchanged (see below).

Mandatory Language

Mandatory language on health effects (from Appendix B to Subpart Q) must be included as written (with blanks filled in) and is presented in this notice in italics and with an asterisk on either end.

You must also include standard language to encourage the distribution of the public notice to all persons served, where applicable [40 CFR 141.205(d)]. This language is also presented in this notice in italics and with an asterisk on either end.

Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with filtration treatment technique violations. Depending on the corrective action you are taking, you can use one or more of the following statements, if appropriate, or develop your own text:

- We added chemicals that reduce turbidity.
- We sampled both untreated and treated water for the presence of coliform bacteria.
- We monitored chlorine levels and adjusted them as needed to compensate for the filtration problems.
- We inspected and cleaned the filters.

After Issuing the Notice

Make sure to send your primacy agency a copy of each type of notice and a certification that you have met the public notice requirements within ten days after you issued the notice [40 CFR 141.31(d)].

SWTRs Turbidity Exceedance Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Warm Springs Water System PWS ID# 104101247
Did Not Meet Treatment Requirements-Turbidity

Our water system recently violated a drinking water requirement. Although this was not an emergency, as our customers, you have a right to know what happened, what you should do, and what we did (are doing) to correct this situation.

We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering the water supply. [**Insert appropriate description of the violation from instructions on the previous page.]**

What should I do?

- There is nothing you need to do. You do not need to boil your water or take other actions. We do not know of any contamination, and none of our testing has shown disease-causing organisms in the drinking water.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been, you would have been notified within 24 hours. **Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.** These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?

[Describe the corrective actions and when the system returned or expects to return to compliance.]

For more information, please contact [name of contact] at [phone number] or [mailing address].

> *Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.**

This notice is being sent to you by **[system].** Water System ID#: _____.
Date distributed: _____.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3123

OFFICE OF
WATER AND
WATERSHEDS

November 19, 2018

Travis Wells, General Manager
Warm Springs Water Treatment Plant
Confederated Tribes of Warm Springs
P.O. Box 1196
Warm Springs, Oregon 97761

Re: **Treatment Technique (TT) Violation: Exceedance of Monthly Turbidity- 0.3 Nephelometric Turbidity Units (NTU)-Federal Violation Code # 44**
Warm Springs Water Treatment Plant PWS ID# 104101247

Dear Mr. Wells:

We recently reviewed your monthly report for Combined Filter Effluent(CFE) Turbidity and your results for October 2018 showed that **13.77%** of turbidity measurements were above **0.3 NTU** and **86.23%** were below the standard turbidity level.

Under the Surface Water Treatment Rule(SWTR), for systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least **95%** of measurements taken each month. That is, 95 percent of the measurements recorded every 4 hours must be less than or equal 0.3 NTU over each calendar month period.

It is important to know that the SWTR established treatment technique requirements for turbidity to protect public health. Turbidity is an indicator for (1) filtration efficiency for removal of pathogens and other particles, and (2) the treatability of the water by disinfection. A high turbidity level indicates the potential for pathogen breakthrough and interference with disinfection efficiency. In addition, your water system must calibrate the continuous turbidity monitor(s) at least once per week according to the procedures established in Method 2130 B of the 17th edition of Standard Methods for the Examination of Water and Wastewater.

Based on the monthly CFE turbidity report provided by your system on November 12, 2018, our review showed that the Warm Springs water system has failed to meet the turbidity level treatment technique requirements under the SWTR. **As a result, this is a treatment technique violation and requires Tier 2 public notification.**

A public water system that violates a TT is required to notify the public of this TT violation as soon as practical, but no later than 30 days after learning of the violation, so please make sure to notify your customers no later than 30 days after you receive this letter. The notice must be delivered by hand or by mail. It must also be made available to other persons served by the water system that have not been reached by the methods listed above, for example via newspaper, email or by posting in a public

location. Please see the enclosure titled "Public Notification Delivery Instructions" which provides more details about public notification delivery. You must also send a copy of the notice that you deliver to your customers as well as a completed certification form (enclosed) to the Environmental Protection Agency no later than ten days after you notify your customers.

We have drafted a public notice which you can distribute to your customers (see enclosure with the heading "Important Information about Your Drinking Water"). If you would like to prepare your own public notice, please contact Ricardi Duvil, PhD., P.E., SWTR manager, at duvil.ricardi@epa.gov or (206) 553-2578 so he can advise you as to which sections of this draft notice must be included in your notice exactly as written. If you would like to use the enclosed version of the notice, but would like to change something in it, for example, the water system contact, please contact Ricardi. He can make the change and send the revised notice to you, or he can send you an electronic copy of the notice and you can make changes yourself.

If you have any questions, please contact Ricardi Duvil, Ph.D., P.E., SWTR Manager, at the email address and phone number above.

Sincerely,

Marie Jennings
Drinking Water Unit Manager

Cc: Alyssa Macy, Chief Operations Officer

PUBLIC NOTICE CERTIFICATION FORM

PUBLIC WATER SYSTEM NAME Warm Springs Community Water System

PUBLIC WATER SYSTEM ID 104101247

DESCRIPTION OF VIOLATION(S) TURBIDITY EXCEEDANCE

VIOLATION DATE(S) November 19, 2018

The public water system named above hereby affirms that public notice has been provided to consumers in accordance with the delivery, content, and format requirements and deadlines as required by 40 CFR Part 141 Subpart Q.

☐ Consultation with EPA (if required) on the following date(s)_____

☐ Notice distributed by the following method(s) (for example, mail, posting, etc. _____

_____

on the following date(s)_____

☐ Notice posted at the following location(s) _____

_____

on the following date(s)_____

_____ _____

Signature of owner or operator date

****

Send completed form and copy of public notice to EPA by

fax to (206) 553-1280 or

mail to Drinking Water Unit
Environmental Protection Agency
1200 Sixth Ave, Suite 155, OWW-193
Seattle, WA 98101-3123

From:	Travis Wells
To:	Jennings, Marie; Duvil, Ricardi
Cc:	Alyssa Macy
Subject:	Fwd: Trip Report Warm Springs Dec 4-5, 2018
Date:	Monday, December 10, 2018 2:25:42 PM
Attachments:	image002.jpg TR Warm Springs 12-2018.pdf

As promised, see the attached site visit report from Laddie.

I am concerned about the cost of the calibration solution and the frequency EPA has requested from us. Is there any way we can minimize that to monthly instead of weekly as asked for by Mr. Duvil? If we do the weekly calibration we are looking at $1,920 for the three month schedule versus $480 if we do the calibration monthly.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

---------- Forwarded message ---------
From: **Folster, Laddie (IHS/POR)** <Laddie.Folster@ihs.gov>
Date: Mon, Dec 10, 2018 at 1:07 PM
Subject: Trip Report Warm Springs Dec 4-5, 2018
To: Travis Wells <travis.wells@wstribes.org>
Cc: chico.holliday@wstribes.org <chico.holliday@wstribes.org>, steve.courtney@wstribes.org <steve.courtney@wstribes.org>, Sauer, Steve (IHS/POR) <Steve.Sauer@ihs.gov>, Hancey, Derek (IHS/POR) <Derek.Hancey@ihs.gov>, Haugland, Craig J. (IHS/POR) <Craig.Haugland@ihs.gov>, Martinson, Mathew J (IHS/POR) <Mathew.Martinson@ihs.gov>

Travis:

Please find attached my Trip Report for last week at the WTP. Included is what was accomplished and recommendations. Please call If you have questions about this.

Ladd Folster

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Indian Health Service
Spokane District Office
528 E. Spokane Falls Blvd.
Suite 302
Spokane, WA 99202

MEMORANDUM

DATE: Monday, December 10, 2018

FROM: Tribal Utility Consultant (TUC)

SUBJECT: Trip Report, Warm Springs, Dry Creek Surface Water Treatment Plant (WTP) December 4-5, 2018

TO: The Record

BACKGROUND & OBJECTIVES:

To assist the Utility to:

1. Calibrate the six Hach 1720E Turbidimeters
2. Assist the operators to get a handle on coagulant control

CONTACT(S):

Mr. Travis Wells, GM, Public Works Department, Warm Springs Tribe
Mr. Steve Courtney, Lead Operator, Dry Creek Surface Plant, Warm Springs
Mr. Ronnie Palmer, Operator, Dry Creek Surface Plant, Warm Springs
Mr. Steven Stewart, Operator, Dry Creek Surface Plant, Warm Springs

FINDING(S) AND ACCOMPLISHMENT(S):

Calibration of the Hach 1720E Turbidimeters.

After arriving at the WTP, I talked to Steve Courtney about the issues he wanted me to assist them with. First was the calibration of the six Hach 1720E Turbidimeters. There is one raw water, 4 individual filter effluent (IFE) and one combined filter effluent (CFE) turbidimeters in the process. Hach recommends that these be cleaned and calibrated quarterly and bulbs replaced annually. From the calibration log in the sc200 controllers, this has not been done since they were installed in 2016. Calibration standards in the form of StablCal 20NTU and new light bulbs were on hand.

Once we were ready, I went over how to prepare the calibration column and how to pour in the StablCal into the column. Mr. Palmer, Stewart and I started with the CFE and preceded through the IFE to the raw water 1720E. All had good calibration and thoroughly cleaned except IFE #2 (filter #2). This unit would not take a calibration even after multiple tries. The light flashed inside sometimes and the sc200 would display errors. We disassembled the head to see if there were loose wires, there were no apparent issues. We reassemble and placed the 1720E back into place.

This IFE, #2, also has an issue with the sampling pump. It will not hold prime. Mr. Palmer said he thinks it has a damaged suction lift line. This needs to be repaired and resolved.

Hach does not sell 1720E turbidimeters now because they have transitioned to a completely different unit TU5300. Replacement cost for this one 1720E is in the $2,000 range. However, Hach can refurbish 1720E units and I suggest that the Utility explore this option. For the short run, the raw water 1720E head can be switched to the IFE #2 turbidimeter once the sampling pump issue is resolved. Once the damaged 1720E unit is returned, it can go into the raw water location. Minor programing of the sc200 controllers is needed and I can assist the operator from my office on how to accomplish this.

Additional turbidimeter issues. The rotameters controlling water flow to the turbidimeters are essentially kaput. Flows to the turbidimeters were next to nil and I adjusted to increase but not to control. Hach says that the sweet spot for water flows to the turbidimeters is 300ml/min. These need to be removed and simple valves installed in the feed line and measuring flow with the discharge of the turbidimeters. Over time, plastic tubing to and from the turbidimeters become dirty and/or brittle. This plastic tubing can be purchased from a local hardware store in bulk rolls. Replacement every few years or as needed is recommended. I would also suggest that an additional SD card should be purchased for the IFE sc200 controllers; Mr. Palmer is switching a single card between the two units. Seems a bit awkward to collect important data.

Hach recommends that the 1720E turbidimeters should be calibrated every 3 months and bulbs replaced annually. The EPA may have the Utility on an increased schedule. Each time a calibration is performed, a new bottle of StablCal is needed at a cost of about $160 per bottle. Annual bulb costs are about $65 per bulb (6 bulbs). Mr. Palmer is fully trained on performing the calibration of the 1720E turbidimeters and performing log entries into the sc200 controllers. I also suggested that it be noted in the daily WTP log of the calibration as well as lot # of the StablCal and expiration date.

Control of Coagulant Addition:

The Warm Spring Treatment Plant uses a primary coagulant, Aluminum Chlorohydrate (ACH), to destabilize and coagulate particles in the raw water, which will normally all fall out in the sedimentation chamber. The process has operated for extended time without accurately knowing the correct dosage that is required at any particular time. In

essence the operators have been guessing at the dosage because they were not jar testing nor was the Streaming Current Monitor (SCM) was either off line or inaccurate.

The operators need to develop their jar testing skills both for a fall back if the SCM fails again and for a check on the accuracy of the SCM. This skill is a normal requirement in the water treatment industry and each operator should be proficient in this skill.

The ChemTrac SCM in the WTP was, in prior visits, not operating power wise, because power is being supplied by a circuit that somehow is cross connected with one of the pumps in the raw water pump room. When that pump was out of service so was the SCM. The SCM should be independent of any other power circuit.

I took a close look at the SCM in order to discern why it was not operating correctly. The unit was stuck in the +1.90 SCU range and was not drifting which is normal. I found that there was no water going through the SCM probe. This condition normally kills the probe which would need to be replaced. The sample pump was working but a fine mesh screen was totally clogged with floc-snot. Mr. Courtney and I removed the screen and cleaned the housing and reestablished the water flow. This screen should not be inline because it strains out some of the material, i.e. floc, that the SCM needs to measure.

Next, we removed the SCM probe to clean. There was some grit in the probe but it looked dirty with slimy organic residue. In the lab I cleaned the probe with Comet Soft Scrub and vigorous scrubbing with bottle brushes. This is the best cleaner for SCM probes to remove the organic slime which builds up on the probe. The probe parts are fragile but easily disassembled, the operators need to take time and do the job carefully.

Upon reassembly, we found that the SCM began to measure the charge in the water. I was amazed that the unit had not been damaged beyond repair. Once the SCM stabilized it showed a drifting value of +1.34 SCUs. This is an indication that the WTP was being overdosed with ACH. I began to slowly reduce the ACH injection using speed on the LMI pump from 26 to eventually 13. Stroke remained at 30. This maintained a steady 0.00 SCU. By reducing the speed to 13 showed that the plant was being dosed approximately 2x the amount of ACH that which is required. In my experience when operators are left to guess at the correct dosage, they always over dose. Overdosing sometimes pass through the filters and can manifest in in the first WST (Tee Wees) as a slimy coagulant layer at the bottom of the WST. An inspection from the upper hatch and a bright light source will usually determine if there is a layer in the WST. Adjustment of the speed on the LMI pump yielded about a 0.08-0.09 SCU change of the SCM.

The ChemTrac SCM is the most important piece of equipment in the coagulant system unless jar testing is used to adjust coagulant. Jar Testing should be a fall back and used to verify the SCM. Maintaining the SCM is paramount for the operators. This was explained to Mr. Courtney repeatedly while I was showing him how to clean the probe and remove and replace it on the SCM. Daily check should come with a blow-down of

the hydro-cyclone and that there is water passing through the probe. Every day, by the hour, the operator needs to check the SCM value and make appropriate adjustments if needed. If the unit is to the positive cut back on the ACH. If low, add more ACH. This is not automatic and it is part of proper operations to make this manual adjustment. On a weekly basis the probe needs to be pulled apart and cleaned of the organic slime build up using the Comment Soft Scrub. If the slime builds up the SCM will begin to act up and not respond. This is an operator duty found in other WTPs using SCMs.

Mr. Courtney's shift was ending and since there was not an operator with experience there for swing shift, I did not get a chance to stop the chlorine injection and observe any changes in the SCM. If there was a change to the positive and its relative degree of deflection would indicate a relative interference of the chlorine with the ACH. I would still like to do this experiment with Mr. Courtney carrying it out. Response time to the SCM is about 1.5 minutes, which means the chlorine would not be off for very long.

Another item I would recommend is a flow meter that reads out in GPM should be installed or upgraded upstream of the static mixer. The current meter is nothing but a totalizer. Mr. Courtney is using flows based on new line shaft turbine pump values. This can be deceiving because without bowl/impeller adjustments, line shaft turbine pumps have the tendency to slip in their flow. Plus, if doing jar testing, an accurate value of plant inflow is needed for proper dosage calculations. Contact me if a new flow meter is desired, there are many options that can be added to measure this flow.

Safety Issues:

Two serious safety issues I found while at the WTP:

1. Throughout the WTP there is extremely poor lighting due to the lack of bulb replacement. Some areas it is downright dark and difficult to work in without axillary lighting.
2. There is a ¼-inch standing water in front of the motor control panel, which feed the three each 400 hp line shaft turbine pumps in the finished water room. To compound this, I was told that one of the pumps need to be started locally at the panel while standing in the water as apposed to starting from the SCADA system. There is extremely high voltage in this panel and the operators are placed in danger of arc flash. Leaks need to be fixed.

RECOMMENDATION(S) AND/OR CONCLUSION(S):

1. The turbidimeters are all calibrated (except for IFE #2, which is out of service) and Mr. Palmer is trained to accomplish the task. Hach recommends every 90 days unless EPA has set a schedule of calibration.
2. Replace all tubing at the turbidimeters (and chlorine analyzer CL-17).
3. Either replace the bad 1720E turbidimeter with an upgraded unit or send the unit out to be refurbished by Hach.

4. Switch the raw water turbidimeter with the bad IFE #2 turbidimeter. I can help remotely with this but the procedure is in the turbidimeter manuals. Raw water turbidity is not required by EPA, IFE #2 is.
5. Maintain the ChemTrac SCM in operation and to adjust manually the ACH dosage. This reading should be made at least hourly when producing water. Recording the value is recommended and interpret the results to make operational adjustments.
6. Clean the SCM probe weekly and blow down hydro-cyclone daily. Verify water supply to the probe.
7. Develop and maintain competency with jar testing. This is the fall back for coagulant dosing if the ancient SCM develops issues or completely fails.
8. Install a water meter just upstream of the static mixer that reads in GPM as well as totalizing. This is an essential flow measurement for proper dosing. I can supply meter suggestions that are relatively inexpensive and easy to install.
9. The LMI pump settings for speed and stroke should be switched. Speed should always be larger than stroke. The B921-86HV pump being used is bordering on the too big at the required dosage setting following the SCM values. Recommend using the available smaller pumps in order to more closely control the coagulant dosing. Mr. Courtney is aware of this.
10. Being competent water operators, involve constant development of new skills and refreshing old skills. There are many free training videos on YouTube for reference. In particular the AWWA and the American Water College (https://www.youtube.com/user/AmericanWaterWorks/videos https://www.youtube.com/user/AmericanWaterCollege/videos) series' of videos the explain things like Jar Testing, distribution valves, pumps, plant treatment, math etc.. Both water and sewer videos are available and most are 10 minutes or less. I suggest the operators watch these for review and new subjects.

As before, I am available to assist the utility with all three of the water systems that the Utility maintains. With a little work and some investment, the Dry Creek WTP can improve operations and return to providing high quality water to the Warm Springs customers. Please call me if there is any questions about what is included in this Trip Report.

Laddie E. Folster

cc.

Mr. Travis Wells, GM, Public Works Department, Warm Springs Tribe
Mr. Chico Holliday, Water Wastewater Supervisor, Warm Springs Tribe
Mr. Steve Courtney, Lead Water Treatment Operator, Warm Springs Tribe
Capt. Mat Martinson, Director SFC, IHS Portland, OR
CDR Steve Sauer, District Engineer, IHS Spokane, WA
CDR Craig Haugland, Senior Environmental Engineer, IHS Port Angles, WA
Lt. Derek Hancey, Environmental Engineer, IHS Portland, OR

From: Travis Wells
To: Alyssa Macy; Graham, Russell (IHS/POR); Duvil, Ricardi
Subject: Fwd: Turbidity Issue at the WS WTP
Date: Wednesday, October 17, 2018 7:17:46 AM

---------- Forwarded message ---------
From: **Chico Holliday** <chico.holliday@wstribes.org>
Date: Wed, Oct 17, 2018 at 7:15 AM
Subject: Re: Turbidity Issue at the WS WTP
To: Travis Wells <travis.wells@wstribes.org>

might i add the our water/wastewater did flush hydrants and took chlorine readings throughout the system on friday 10-12-18 morning begining at 8:00 am and ending on 10-13-18 at 330 pm .

On Tue, Oct 16, 2018 at 3:52 PM Travis Wells <travis.wells@wstribes.org> wrote:

> Mr. Duvil,
>
> Based on what we knew (myself, Chico and Russell) at the time we decided to issue a notice of the exceedance of the allowable turbidity levels at the Warm Springs Water Treatment Plant. We found out about the issue late Thursday (10/11/18) and met to discuss the issue first thing Friday morning (10/12/18). We made several attempts to get in touch with somebody from EPA with no success. We did issue a release of information to our local radio station to inform consumers that we did exceed the allowable turbidity levels.
>
> The time line is as follows:
>
> 1615 hrs on 10/11/18 - i was notified via email by our Chief Operations Officer, who received a call from the IHS director Mathew Martinson regarding an issue with no coagulant being used in the treatment plant.
> 1650 hrs on 10/11/18 - I was finally able to confirm that the plant was being operated with the use of Aluminum Chlorohydrate (ACH) since the afternoon of 10/8/18. By the time I was able to find phone numbers for EPA contacts it was after 1700 hrs and I decided to address the issue first thing in the morning.
> 0800 hrs on 10/12/18 - met with the W&WW supervisor, the environmental health specialist and myself to discuss a course of action. Based on the info we had and the fact that the threat had largely come and gone we decided to issue the notice of the turbidity exceedance. We also made several attempts to contact the EPA offices with no success so our decision stood as we had originally decided.
> 1400 hrs - notice was issued to the local radio station.
>
> We discussed the issue at length and the deciding factor was that the water system was already running 24 hours of properly treated water so flushing and issuing a boil notice didn't seem to make sense as the water was "good" water by the time we had been informed of the issue. It seemed unnecessary to flush good water and to issue a boil water notice for water that was then meeting the requirements.
>
> We are also currently working on what needs to be done with the operator who continued to run even though there was no chemical to use. This is basic knowledge for an operator and should never have happened.
>
> Ive attached the turbidity and chlorine level info you requested along with the notice we sent out last Friday.
>
> Pleas contact me with any questions or concerns .

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

--
Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246
C: (541) 460-1262

From: Duvil, Ricardi
To: Ronald Palmer; Chico Holliday; Steven Courtney; Travis Wells
Cc: Graham, Russell (IHS/POR); Folster, Laddie (IHS/POR)
Subject: October MOR data Plus Raw data Turbidity and Chlorine Residual
Date: Tuesday, October 30, 2018 3:18:00 PM

Hello Travis:

Per our conversation, in addition to the MOR requirements, I would like to receive all available raw data (internal SD card) for turbidity and chlorine residual starting with the month of October. This data request will continue on a monthly basis until EPA determines next steps with Warm Springs Water System. Failure to comply with these requirements in a timely manner will trigger a violation of the National Primary Drinking Water Regulations.

Thanks for submitting some of the turbidity data for October but I am looking forward to receiving the entire data set.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
To: "Travis Wells"; Alyssa Macy
Subject: Phone Call- Sanitary Survey Deficiencies
Date: Monday, November 26, 2018 12:35:00 PM

Hi Alyssa and Travis:

My boss would like to discuss with both you the recent sanitary survey deficiencies. Please let me know when you are available for a phone call.

Hope to hear from you soon.

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From: Duvil, Ricardi
To: Jennings, Marie
Subject: Phone Call with Travis Wells
Date: Tuesday, January 29, 2019 6:46:00 PM

Hi Marie:

Could you please setup a phone call with Travis Wells for **Monday, 2/4/2019 @ 4:00 pm ?**

Cheers,

Ricardi Duvil, Ph.D., P.E.
Environmental Engineer
U.S. Environmental Protection Agency
Office of Water and Watersheds
Drinking Water Unit, Region 10
1200 Sixth Ave., Suite 155, OWW-193
Seattle, WA 98101
Phone: (206)-553-2578
Fax: (206)-553-1280

From:	Travis Wells
To:	Duvil, Ricardi
Cc:	Alyssa Macy; michele stacona
Subject:	Phone Call
Date:	Tuesday, November 6, 2018 6:38:40 AM

Ricardi,

Alyssa Macy and myself would like to discuss some concerns with you as soon as possible. Is there a time today that we can call you?

--
Travis Wells
General Manager
Branch of Public Utilities
O: (541) 553-3246
C: (541) 460-1262

From:	Michele Stacona
To:	Russell Graham
Cc:	Alyssa Macy; Austin Greene Jr.; Brigette McConville; c.miller@wstribes.org; Caroline Cruz; Charles Calica; Danni Katchia; Lee Tom; Prevost, Carol (IHS/POR); Raymond Tsumpti; Travis Wells; Valerie Switzler; Duvil, Ricardi
Subject:	Re: Boil Notice
Date:	Monday, November 5, 2018 4:01:51 PM

The boil water notice will be coming out soon.
Thank you

On Mon, Nov 5, 2018 at 3:57 PM Russell Graham <russell.graham@wstribes.org> wrote:

> It is the opinion of this office that any water that is in distribution for agency must be boiled, period. We are not in any position to state the water is safe until such time we test using bacteriological test for total coliform and ecoli, along with validation from distribution has residual from total and especially free coliform. There are far too many risks and errors and points where we can have inadvertent contamination. We must test for consumer confidence and EPA compliance.
>
> We cannot delay this notice and it cannot be downplayed—this is a public health emergency, send the boil order now in the name of public health.
>
> I will not stand here while we cannot prove the safety of our water. The risk is far too great, and anyone that disagrees with me is crazy! Now is the time to act before we kill someone, period or we have someone claim sickness that we cannot epidemilogically prove otherwise.
>
> And FYI, the EPA is copied. We need to stop this NOW, PERIOD!
> --
>
> **Russell Graham, R.S./R.E.H.S.**
> Environmental Health Specialist / Sanitation and Landfill
>
> Confederated Tribes of Warm Springs
> Environmental Health Program
> P.O. Box C
> Warm Springs, OR 97761
>
> (541) 553-4943
>
> russell.graham@wstribes.org

--
Michele Stacona
Secretary-Treasurer/CEO
Confederated Tribes of Warm Springs, Oregon
Office: 541-553-3212

Fax: 541-553-2236
Email: michele.stacona@wstribes.org
Online: https://warmsprings-nsn.gov/

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From:	Travis Wells
To:	Graham, Russell (IHS/POR)
Cc:	Alyssa Macy; Austin Greene; brigette.mcconville@wstribes.org; c.miller@wstribes.org; Caroline Cruz; jody.calcia@wstribes.org; Danni Katchia; lee.tom@wstribes.org; Prevost, Carol (IHS/POR); raymond.tsumpti@wstribes.org; Valerie Switzler; Duvil, Ricardi; michele stacona
Subject:	Re: Boil Notice
Date:	Monday, November 5, 2018 4:04:45 PM

Ive been discussing this with EPA and they are aware of our intent to issue the notice tomorrow morning. Ive drafted a notice that I will be sending to Alyssa for further review.

Travis Wells

General Manager
Branch of Public Utilities
Confederated Tribes of Warm Springs
p: 541.553.3452 m: 541.460.1262
f: 541.553.3380
a: 2251 Rehab Street
Warm Springs, OR 97761
w: warmsprings-nsn.gov e: travis.wells@wstribes.org

For advanced users:

On Mon, Nov 5, 2018 at 3:57 PM Russell Graham <russell.graham@wstribes.org> wrote:

> It is the opinion of this office that any water that is in distribution for agency must be boiled, period. We are not in any position to state the water is safe until such time we test using bacteriological test for total coliform and ecoli, along with validation from distribution has residual from total and especially free coliform. There are far too many risks and errors and points where we can have inadvertent contamination. We must test for consumer confidence and EPA compliance.
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> **Russell Graham, R.S./R.E.H.S.**
> Environmental Health Specialist / Sanitation and Landfill
>
> Confederated Tribes of Warm Springs
> Environmental Health Program
> P.O. Box C
> Warm Springs, OR 97761
>

(541) 553-4943

russell.graham@wstribes.org

From: Russell Graham
To: Alyssa Macy; Austin Greene; Brigette McConville; Caroline Cruz; Charles Calica; Cheryl Tom; Chico Holliday; Clem Picard; Craig Graham; Danielle Wood; Danni Katchia; McMonagle, Rick; Prevost, Carol (IHS/POR); Travis Wells; Duvil, Ricardi
Cc: michele stacona
Subject: Re: Boil Notice
Date: Monday, November 5, 2018 4:08:13 PM

Fire me!

This is a public health emergency. This isn't time for bullshit! This is indeed a public health emergency and if this is downplayed, we will kill someone. Fire me, or I'll gladly resign. This action foremetion is a violation of ethics and public health and you must stop.

On Mon, Nov 5, 2018 at 17:02 Alyssa Macy <alyssa.macy@wstribes.org> wrote:

> Russell, it would be prudent for you to contact Travis directly so that you are aware of what is currently being worked on. We are already planning on doing a boil water notice - you are jumping to conclusions.
>
> You communicate through the appropriate chain of command. Your continued disregard for this is unacceptable and needs to cease immediately.
>
> Alyssa

photo

Alyssa Macy
Chief Operations Officer, Confederated Tribes of Warm Springs, Oregon
541-553-3212
https://warmsprings-nsn.gov/
1233 Veterans Street / PO Box 455, Warm Springs, OR 97761

On Mon, Nov 5, 2018 at 3:57 PM Russell Graham <russell.graham@wstribes.org> wrote:

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